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Age, Sex, Dwellings and Families, and Urban Population.

Any consideration of either theoretical or practical census work should not fail to take into account the various limitations to which each investigation is subject, as well as those to which the office as a whole is subject. The Superintendent and his chiefs are early confronted with questions of time and money.

More especially the matter of time is important in the planning of the work. It will not do to construct a scheme, even in population, agriculture, and manufactures, that cannot be executed to its end, a satisfactory tabulation, in less than about five years, and a large portion of the results in these leading branches of census work should be available to the public within two or three years.

It is apparent, therefore, to one who is familiar with the magnitude of the work of a census office as it has been conducted during the last two censuses, that any elaboration of census schedules used in the census of 1890, should be undertaken with extreme caution, and that, on the contrary, it might be better to reduce the number of questions.

Another matter to be considered in planning census work relates to the printing of final reports. It is very easy to elaborate a scheme of tabulation to such an extent that the report will be too diffuse and will render it difficult for one who examines it to find the information that he wants. There is no use, for instance, in presenting a table stating that two persons died of scarlet fever in a certain sanitary district within a year. or that there was one homicide in a certain county,

Much of the bulkiness of the reports of the eleventh census would have been prevented if minute details like these, which are of no value at all as statements of fact, had been condensed to larger aggregates.

One of the most deplorable limitations to good and quick census work is the spoils system under which the office has been operated and under which, at this writing, it seems likely to be operated for the twelfth census. The evils of that system are exasperating to those who have charge of the work, because they are incessantly blocking the way, upsetting arrangements, and, at the end, curtailing desirable tabulation because the work has been so long drawn out. It has been said, and is doubtless true, that the completion of the eleventh census was delayed at least one year by the change of administration, March 4, 1893, and it is well known that because of that change of administration some of the contemplated and partly accomplished tabulation had to be given up.

The operation of the spoils system is made worse by putting the Census Office in the Interior Department; but aside from any consideration of this sort it would be much better to make the Census Office an independent bureau, responsible directly to the President, which would mean practically that the Director would be the supreme head of the office. The President would not undertake to dictate to the Director what the organization of his office must be, whereas Secretaries of the Interior have been known to do this to an extent which was very detrimental to the good of the office.

AGE.

In the census of 1890 the enumerators were instructed as follows :

"Age at nearest birthday. If under one year, give age in months.

"Write the age in figures at nearest birthday in whole years, omitting months and days, for each person of one year of age or over. For children who on the 1st of June, 1890, were less than one year of age, give the age in months, or twelfths of a year, thus: $3/12$, $7/12$, $10/12$. For a child less than one month old, state the age as follows: $0/12$. The *exact* years of age for all persons one year old or over should be given whenever it can be obtained. In any event, do not accept the answer "don't know," but ascertain as nearly as possible the approximate age of each person. The general tendency of persons in giving their ages is to use the round numbers, as 20, 25, 30, 35, 40, etc. If the age is given as "about 25," determine, if possible, whether the age should be entered as 24, 25, or 26. Particular attention should be paid to this, otherwise it will be found when the results are aggregated in this office that a much more than normal number of persons have been reported as 20, 25, 30, 35, 40, etc., years of age, and a much less than normal at 19, 21, 24, 26, 29, 31, etc."¹

These instructions seem to me to be perfect; they are explicit, clear, and neither too long nor too short.²

¹ Eleventh Census. Instructions to Enumerators. 23.

²[It may be mentioned here, as it is not, I believe, in the Eleventh Census, that the question asked in 1880 was, "Age at last birthday," and in 1890, "Age at nearest birthday." No reason for the change is offered and its wisdom may be doubted. A person usually regards his age as equal to the number of birthdays he has passed. Any attempt by the census to ask a question involving a different conception seems unwise and likely to be misleading. The average age of the population of the United States in 1880 was 24.1 years, in 1890, 25.1 years. (Eleventh Census, Abstract 7.) Of this increase of a year in the average age, a part lying between zero and six months was due to the change in the form of the question, and no one can tell how much. My conjecture is that among adults the part was almost negligibly small. Some evidence of an effect upon the reported ages of children may be derived from the figures. Under the instructions quoted by Mr. Holmes, the children reported in 1890 as one year old should have included only those between twelve months and eighteen months, while in 1880 those one year old should have included all between twelve months and twenty-four months. The figures show that in 1880 eighteen per cent of the children under five were one year old, while in 1890 only fourteen per cent were so. The true percentage was probably over twenty. As the ages of adults were stated in 1890 with decidedly more accuracy than in 1880 (*Am. Stat. Assn.* 5: 133), this decreased accuracy may plausibly be assigned to the change in the form of the question. If so, at least 300,000 children between eighteen and twenty-four months were reported as two years old.—W. F. W.]

It is needless to enter into any discussion as to the desirability of obtaining the statistics of the ages of the population, but there is room for discussion with regard to tabulation.

The method adopted for the census of 1890 was to group the months and make a total for age under one year, and then group the years, thus: 1 to 4, 5 to 9, 10 to 14, etc.

It seems generally to be agreed by those who have given the distribution of ages as reported by enumerators any consideration for the purpose of tabulating them, that such a grouping as this should not be repeated. The years which are notoriously erroneous, that is, the quinquennial and decennial years, are placed at one end in each classification.¹

The English census, in one table at least, has grouped by quinquennial years up to, but not including, 25, and then grouped every ten years, beginning with 25, 35, 45, etc., the object being to put the most erroneous age-year of the group as near the middle as possible. But, in doing this, the scheme allows the age-year, which is of second importance (25, 35, etc.), to be at one end of the group. In this way a subdivision of the decennial groups into quinquennial groups was made impossible, and quinquennial groups are the more useful, if both groupings cannot be had.

I would suggest that a quinquennial grouping should be continued under a new arrangement, the first group

¹ [It may be noticed that there is no traceable concentration on the ages 5 and 15 and little on 10 and 20. It is not until after the age of 20 that the tendency to concentrate on multiples of 5 becomes evident (Am. Stat. Assn., 5 : 133). Before that the tendency is to concentrate on the even years and especially on the years 14, 16, 18, or 21 (the last only for males) which bring some legal privileges or immunities. W. F. W.]

to contain ages under three, the next groups to be 3 to 7 years, 8 to 12, 13 to 17, and so forth. This would place the especially erroneous years in the middle of the groups in every case.

In the tabulation of the scheme of the eleventh census ages were tabulated by sex, general nativity, and color, by states and territories, and by cities of 25,000 inhabitants or more, as shown in the following statement :

Ages of the aggregate population of the United States, classified by sex, general nativity, and color.

Ages of the aggregate population, classified by sex, general nativity, and color, by states and territories.

Ages by periods of years of the aggregate population, classified by sex, by states and territories.

Ages by periods of years of the native white population of native parentage, classified by sex, by states and territories.

Ages by periods of years of the native white population of foreign parentage, classified by sex, by states and territories.

Ages by periods of years of the foreign white population, classified by sex, by states and territories.

Ages by periods of years of the colored population, classified by sex, by states and territories.

Ages by periods of years of the aggregate population, classified by sex, general nativity, and color, for cities having 25,000 inhabitants or more.

The tabulation of ages for the larger cities¹ is especially noteworthy, and the continuance of tabulation for such cities should be repeated in every census. The importance of the urban population in its relative and increasing magnitude has become such that a tabular presentation of facts for the urban population, as distinct from the remainder of the population, should be extended to all tables embracing the whole country wherever the facts are pertinent to the city population either positively or negatively. The limitation of this tabulation of ages in these cities to sex, general nativity, and color was

¹ Eleventh Census. Population, 2 : 114-134, Table 8.

probably due to circumstantial limitations prevailing in the office of the census; and, while this tabulation was more elaborate than that of any previous census or than that of any other country, and the relating of ages to these elements of the population seems to be very desirable, I would suggest that it would be desirable also to tabulate ages by conjugal condition.

In the latest censuses of various countries, ages were tabulated as follows:

England and Wales: By sex; by conjugal condition and sex; by sex, with subdivision of the population into urban and rural; by sex and the defective classes; by sex and the occupations of the blind; by sex and the occupations of the other defective classes; by sex for the mentally deranged in asylums and workhouses; by sex and conjugal condition for the pauper inmates of workhouses; by sex and conjugal condition for prisoners; by sex and nativity; by sex, conjugal condition, and nativity.

In Belgium, the ages are presented in groups by sex. The German tabulation is by sex and conjugal condition. The French tabulation of ages is in groups by sex and occupation; by sex and conjugal condition; and there is a tabulation of ages for the urban population.

Upon examining what has been done in foreign countries with respect to the tabulation of ages, there is little that is practically suggestive.

Desirable as it would be to tabulate occupations by ages, the number and classification of occupations to which our future Census Office is virtually committed would call for a table in such detail that considerations of time consumed and printed space required practically bar out such a tabulation.

SEX.

Little is to be said with regard to sex beyond what incidentally appears in the rest of this paper. All are so agreed that in all population tables the distinction of sex should be made, and this is so universally the practice, that there is nothing to be done beyond expressing a caution against omitting sex from any tabular presentation for which sex is known.

DWELLINGS AND FAMILIES.

The family is such an important social element that I cannot assume any one would seriously question the tabulation of the number, and to this I would add that the family should in some way be related statistically, to its home.

The practice of the national census has been to establish a relationship between the number of families and the number of dwellings.

The following were the instructions defining a dwelling-house :

“ A dwelling-house for the purposes of the census means any building or place of abode, of whatever character, material, or structure, in which any person is living at the time of taking the census. It may be a room above a warehouse or factory, a loft above a stable, a wigwam on the outskirts of a settlement, or a dwelling-house in the ordinary sense of that term. A tenement house, whether it contains two, three, or forty families, should be considered for the purposes of the census as one house. A building under one roof suited for two or more families, but with a dividing partition wall and a separate front door for each part of the building, should be counted as two or more houses. A block of houses under one roof, but with separate front doors, should be considered as so many houses, without regard to the number of families in each separate house in the block. Wholly uninhabited dwellings are not to be counted.”¹

I fail to see that a relationship between number of families and number of dwellings is of sufficient import-

¹ Eleventh Census. Instructions to Enumerators. 19.

ance to be worth the tabulation. It may have had some importance before the erection of large tenements and flat-houses, and before the character of the home underwent the great change that the growth of cities and towns has imparted to living. The original, and continued, object of relating families to number of dwellings was, and is, to measure statistically the degree of crowding. But these statistics no longer measure this, or certainly not in the sense that they measured it in the past.

In some southern county there may be a dwelling to every family, inhabitants being, say, largely composed of negroes in a cotton region; but these families, for the most part, may be living in very small quarters and in mere cabins, and the average of one dwelling to a family should not be received as having any significance at all.

In cities, on the other hand, while a ratio of dwellings to families would give some indication of density of population, it might give no indication of floor space-crowding, since the dwellings are of such indefinite size in cities and many of them are not only large but afford very commodious space.

I would, therefore, recommend that no further statistics of the number of dwellings be published; but, as I have said, some sort of relationship between the family and its home, as indicating family circumstances, should be adopted. The facts taken for this purpose must be very few in number and must be easily ascertainable and represented without a special schedule and without somewhat elaborate inquiry into the home circumstances, which, of course, would be practically out of the question.

I think of nothing else that might be feasible, and at the same time indicate fairly significant results, which is as good as taking the number of rooms occupied by each

family, regardless of the number of families that there may be in the dwelling. The number of rooms is readily ascertainable by any enumerator, as has been demonstrated in Massachusetts and in France and England, and the returns present no difficulties to the tabulator.

It would be inadvisable to change the definition of the word family for statistical purposes. The enumerators of the eleventh census were instructed as follows :

"The word family, for the purposes of the census, includes persons living alone, as well as families in the ordinary sense of that term, and also all larger aggregations of people having only the tie of a common roof and table. A hotel, with all its inmates, constitutes but one family within the meaning of this term. A hospital, a prison, an asylum is equally a family for the purposes of the census. On the other hand, the solitary inmate of a cabin, a loft, or a room finished off above a store, and indeed all individuals living out of families, constitute a family in the meaning of the census act.

"By 'individuals living out of families' is meant all persons occupying lofts in public buildings, above stores, warehouses, factories, and stables, having no other usual place of abode ; persons living solitary in cabins, huts, or tents ; persons sleeping on river boats, canal boats, barges, etc., having no other usual place of abode, and persons in police stations having no homes. Of the classes just mentioned the most important, numerically, is the first, viz. : those persons, chiefly in cities, who occupy rooms in public buildings, or above stores, warehouses, factories, and stables. In order to reach such persons the enumerator will need not only to keep his eyes open to all indications of such casual residence in his enumeration district, but to make inquiry both of the parties occupying the business portion of such buildings and also of the police. In the case, however, of tenement houses and of the so-called 'flats' of the great cities as many families are to be recorded as there are separate tables.

"A person's home is where he sleeps. There are many people who lodge in one place and board in another ; all such persons should be returned as members of that family with which they lodge."¹

To depart from the foregoing definition of a family, which has been substantially the one adopted previously, would be uncalled for, but it does seem necessary that there should be some improvement in the tabulation of families. A mere average of the number of persons to

¹ Eleventh Census. Instructions to Enumerators. 20.

a family, while useful for some purposes, is far from being as useful as a statement of the number of families having a specified number of members. A presentation of facts in this way, not only for the number of persons in a family, but in nearly all other cases of the sort, is so generally agreed upon by statisticians and students of statistics, that I feel it needless to do more than make the suggestion.

The instructions given to the enumerators of the census of 1890 were very well prepared, and I submit below extracts from them relating to the family :

" Number of persons in this family.

"The answer to this inquiry should correspond to the number of columns filled on each schedule, and care should be taken to have all the members of the family included in this statement and a column filled for each person in the family, including servants, boarders, lodgers, etc. Be sure that the person answering the inquiries thoroughly understands the question, and does not omit any person who should be counted as a member of the family."¹

" Relationship to head of family.

"Designate the head of a family, whether a husband or father, widow or unmarried person of either sex, by the word 'Head;' other members of a family by *wife, mother, father, son, daughter, grandson, daughter-in-law, aunt, uncle, nephew, niece, servant*, or other properly distinctive term, according to the particular relationship which the person bears to the head of the family. Distinguish between *boarders*, who sleep and board in one place, and *lodgers*, who room in one place and board in another. If an inmate of an institution or school, write *inmate, pupil, patient, prisoner*, or some equivalent term which will clearly distinguish inmates from the officers and employes and their families. But all officers and employes of an institution who reside in the institution building are to be accounted, for census purposes, as one family, the head of which is the superintendent, matron, or other officer in charge. If more than one family resides in the institution building, group the members together and distinguish them in some intelligible way. In addition to defining their natural relationship to the head of the institution or of their own immediate family, their official position in the institution, if any, should be also noted, thus : *Superintendent, clerk, teacher, watchman, nurse*, etc."²

¹ Eleventh Census. Instructions to Enumerators. 20.

² Eleventh Census. Instructions to Enumerators. 22,f.

Most of the censuses of foreign countries took account of the number of dwellings, and France ascertained various details relating to the home, as the number of living rooms, number of stories, etc.

In the latest English census tenements with less than five rooms were tabulated as having one, two, three, four, and over four rooms, and also by number of occupants. The instructions were that, "all the space within the external and party-walls of a building was to be considered a separate house. . . . By a 'tenement' was to be understood any part of a house occupied either by the owner or by a tenant."¹

The use of the word "tenement" in the English enumeration led to considerable confusion; no instructions were given as to what constituted "a room."

The experience of the latest English census sustains me in advising that there should be no tabulation of the number of dwellings. The Registrar writes that the instructions in regard to dwellings and tenements "were not universally observed, and often a block of buildings consisting, according to the definition, of several distinct houses, was treated as a single house, while on the other hand portions of one and the same house held as different tenements, were often counted as separate houses. There is, moreover, very good ground for believing that the introduction into the enumeration book of a new column in which particulars were to be inserted as to the number of rooms in a tenement has, by confusing the enumerators, materially added to the frequency of these errors, so that the figures must be received with some reservation."

The last Scotch census ascertained and published the

¹Great Britain Commons Papers 1893, volume 106. Census of England and Wales. General Report. 20.

number of families, with specified number of members by number of rooms with specified number of windows and rooms without windows.

In our census of 1890 tables were published, as shown by the following description :

DWELLINGS AND FAMILIES.

Total dwellings and persons to a dwelling, by states and territories.

Total families and persons to a family, by states and territories.

Total dwellings and families, and persons to a dwelling and to a family, by counties.

Total dwellings and families, and persons to a dwelling and to a family, for places having 2,500 inhabitants or more.

Persons to a dwelling, in detail, by states and territories.

Persons to a dwelling, in detail, for cities having 25,000 inhabitants or more.

Persons to a family, in detail, by states and territories.

Persons to a family, in detail, for cities having 25,000 inhabitants or more.

Number of dwellings having specified number of families, with average number of families to a dwelling, for cities having 100,000 inhabitants or more, and by wards for certain cities.

Number of families in dwellings according to specified number of families, for cities having 100,000 inhabitants or more, and by wards for certain cities.

The Massachusetts census of 1895 ascertained, in considerable detail, the number of rooms occupied by families (not the number of families in a dwelling-house), and a description of the materials of which dwellings were constructed. Even if it were desirable, a national census could not undertake to ascertain the sorts of materials entering into the construction of dwellings, because the work of the Census Office could not stand so much elaboration.

URBAN POPULATION.

I have already incidentally mentioned the subject of urban population, and expressed the desirability of pre-

senting tables for the larger cities for the subjects that are related, either positively or negatively, to city life. I would say that the work of the census of 1890 in presenting tables for cities should be repeated and extended.

It would hardly seem advisable to increase the work previously done in the preparation of social statistics of cities, but rather to see that the work is placed in expert hands in order that its accuracy may be assured. I would suggest, however, that in the work on the social statistics of cities, a special study of suburban transit be made, and for that purpose I submit the accompanying table, which is supposed to represent all of the lines for passenger transportation running from suburban towns and cities to New York city, and is to include the trains running to the city; a similar table to be provided for trains running from the city:

	POPULATION.		TIME TO CITY HALL.						
			New York city						
Number of trips possi- ble in 24 hours.	Minutes.								
	Less than 5	6-10	11-15	16-20	21-30	31-45	46-60	60-120	
4	-----	-----	-----	-----	-----	-----	-----	-----	
5	-----	-----	-----	-----	-----	-----	-----	-----	
6	-----	-----	-----	-----	-----	-----	-----	-----	
7	-----	-----	-----	-----	-----	-----	-----	-----	
8	-----	-----	-----	-----	-----	-----	-----	-----	
9	-----	-----	-----	-----	-----	-----	-----	-----	
10	-----	-----	-----	-----	-----	-----	-----	-----	

Such a table as the foregoing is a matter of no singular importance, but is merely intended to be a part of the so-called social statistics of cities. Its object is to show how it happens that the long feared congestion of population in parts of large cities is, or may be, relieved.

It hardly seems within the scope of this paper to present, in detail, the varied investigations that need to

be carried on in the collection of social statistics of cities. It is a work of many details, and to formulate a scheme of investigation would require months.

The subjects of urban growth, of the effects of city life upon the people physically, morally, mentally and financially, of municipal finance and management, the question as to whether, and to what extent, the municipality should own gas-works, water-works, etc., and many other problems that I do not need to mention, afford numerous opportunities for statistical work on this subject, but to what extent the Census Office should undertake them, is open to discussion. Some of this field has already been covered by the Department of Labor, and some by other statistical offices, not always, it is true, thoroughly and extensively, but yet, in the case of the Department of Labor, extensively enough to indicate that the field can be covered by a statistical office smaller than that of the Census Office, and, therefore, that the census need not be burdened with such work.

The matter of tabulating the entire population with regard to relationship to the head of the family calls for no suggestions. This tabulation, which has been omitted in the past, should be included. I suppose that there is no disagreement as to the desirability of these statistics, and in their tabulation they would require no expensive elaboration.

GEORGE K. HOLMES.

U. S. Department of Agriculture.